SPEECH OF MR. CLIFFORD C. PATERSON AT THE GOVERNMENT BANQUET, 25TH SEPTEMBER, 1931.

Mr. C. C. Paterson: I rise to support the response of the treasurer of the Royal Institution, to whose speech we have just listened with so much interest. I know I may speak for all engineers, and not merely for electrical engineers, in appreciation of this opportunity of meeting, my Lord Reading, under your presidency. For, by your inspiring message, as well as by your invitation to us to meet you here at dinner, you have put the seal of public approval upon these commemorative meetings of tribute to Faraday.

If Michael Faraday should appear here at this banquet, I do not think he would be altogether surprised that we should be meeting to celebrate discoveries which he undoubtedly realized were pregnant with great consequences. But I think that he would be very interested in the kind of people gathered here to signalize the occasion. I am sure that Faraday would regard it as eminently right that Sir Robert Robertson should be here—and, indeed, how delighted he would be to see such an atmosphere of cheerful well-being in the treasurer of the Royal Institution! I can imagine his looking upon me—an electrical engineer—with some curiosity, even apprehension—the uncertainty which might be associated with the first contact with, say, a new and rather irregular phenomenon. But when he heard that a Prime Minister of England was to have presided, I imagine his feelings would be akin to those of incredulity. He would think of the slender favours he himself received from Prime Ministers, and would think to himself: "England is surely improving—Prime Ministers have a far more intelligent appreciation of things that matter than they had in my day."

Viewing the influence which Faraday has had on engineering, one is chiefly impressed by the wonderful heritage which has come to electrical engineers, in that their patron saint has been a great physicist and not a great engineer. Engineering achievements in the electrical field have been great. The work of the engineer has been a powerful inspiration to succeeding generations. But there has been a greater impulse than these. Owing to this heritage of ours, there has been at the centre of the intellectual outlook of the electrical engineer the urge to explore and to understand rather than to construct and execute—an outlook which is reflective rather than motive. It is a great thing to have bequeathed to us the record of the achievements of great engineers. But if electricity has thrived it is because it has had more than this. Above the work of engineers in every country, inspiring and directing their outlook on their work, has been the influence and example of great physicists—and for the electrical engineer in every land I believe that the most dynamic influence has been that of Michael Faraday: for Faraday has been to so many a personal possession and ideal. I hope that we engineers will not allow ourselves to be unmindful of the profound influence which this has had on the evolution of our craft. It is all too easy for men to be so gripped with the importance of carrying out their engineering schemes, that the fundamentals upon which those schemes rest—and upon the extension of which future development depends—are forgotten, or if not forgotten, are repudiated as a personal responsibility. Thus industries grow up and professions develop to exploit existing knowledge. But we miss in many of them that creative kernel at the centre—to give new knowledge and new inspiration and to replenish the tissues of industry which are inevitably wasted by time and use. May I go a step further and insist that that vital and creative kernel must exist, first of all, in the intellectual outlook of the individual. It is not to be found in the mere provision of universities and laboratories within the community or within the industry. The individual man himself must believe in the vital need and practical importance of the Faraday spirit—as an effective force in his own sphere of work. If each man's intellectual outlook is set in the right direction, will he not be both creative and receptive of what is new and progressive? He will recognize automatically the influences which make for healthy evolution. On looking round, one feels there are industries which have a shell but no kernel—a shell which wears very thin in places. And are there not organizations for research and learning which find themselves like a kernel without a shell? Whether, therefore, we consider the isolated unit of a single State service or of a single industrial concern—or whether we look more broadly upon a whole profession or industry—he who will inquire into the real state of its health will try to see how much does the spirit of Faraday, or of the other great men of like ideals, really operate through its individuals for its health and well-being. My own institution has had some of these considerations in mind when it recently required qualification for membership to be restricted no longer to a degree in electrical engineering, but permitted also a degree in science, including physics, to validate admission. And this was done because it was felt that the mere introduction of orthodox engineers to the corporate body is not sufficient to ensure a healthy intellectual outlook. Far be it from me to suggest that the physicist is but an unorthodox engineer. But it must be admitted that, as things were, Michael Faraday, had he been with us as a young man, would hardly have had the qualification for membership of our Institution.

And is it out of place to suggest that in other spheres a tendency to rather rigid professional limitations may sometimes to-day be preventing free and fundamental thought from having its full influence on public and other services? For in these spheres also, courageous thinking on fundamentals must leaven from inside, if practical good is to be achieved.

And now, as we look back over the wonderful 100 years since Faraday, all unconscious, set his great example, we can discern many another who has been touched with the same kind of genius. Wherever this unselfish and fearless thought has brooded, it has given new vision and the opportunity of new life to those who are wise enough to bring themselves within its influence.